

Date: Wed, 25 Aug 93 04:30:14 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #26  
To: Ham-Ant

Ham-Ant Digest                      Wed, 25 Aug 93                      Volume 93 : Issue    26

Today's Topics:

                    AM antennas ? (2 msgs)  
                    How to make one (was: SWR Meters)  
                    Wanted - a long distance AM antenna

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

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(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
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Date: Wed, 25 Aug 1993 00:00:25 GMT  
From: swrinde!sdd.hp.com!col.hp.com!news.dtc.hp.com!srngenprp!  
alanb@network.ucsd.edu  
Subject: AM antennas ?  
To: ham-ant@ucsd.edu

Jeff Hintzman (hintzman@hpcvcbn.cv.hp.com) wrote:  
: Can anyone point me towards information for building an antenna for  
: receiving commercial AM radio broadcasts? Apologies for getting  
: slightly off the ham topics.

When I was a kid, I made an AM antenna by simply running a half dozen  
turns of magnet wire in a big loop stapled to the back of a large  
chest of drawers. I wrapped a couple turns of the wire around the  
loopstick antenna on the AM radio. (And soldered the two free ends  
of magnet wire together to complete the loop.) Worked great!

It probably would work even better if you tune the loop to resonance  
with a series capacitor.

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Date: 24 Aug 93 20:38:49 GMT  
From: psinntp!newsserver.pixel.kodak.com!kodak!ornitz@uunet.uu.net  
Subject: AM antennas ?  
To: ham-ant@ucsd.edu

In article <1993Aug24.175054.10969@hpcvca.cv.hp.com>  
hintzman@hpcvcbn.cv.hp.com writes:  
>Can anyone point me towards information for building an antenna for  
>receiving commercial AM radio broadcasts? Apologies for getting  
>slightly off the ham topics.

Here are three suggestions for medium wave antennas...

The Beverage antenna is a good choice as a MW receiving antenna. It is fairly quiet with a good signal to noise ratio, is mounted low to the ground, and can be built using just wire. On the negative side, you need lots of real estate in the preferred direction. This travelling wave antenna is quite directional. QST, the Amateur Radio Magazine, had a good article on Beverage antennas a few years back.

If you just want to improve MW reception but not be directional, a random length of wire, 50 to 150 feet or more, may be strung out across your yard. Connect this wire to your antenna terminal and a good ground to the radio. If your radio does not have an antenna jack, open up the radio and find the ferrite loopstick. Wind a few turns of insulated wire around one end of the ferrite and run this to a jack installed on the radio cover. Ground one side of the loop of wire and connect the other to your antenna.

A final suggestion is a small directional loop antenna. Designs for these are often found in SWL magazines. Wind a multiturn loop of wire a few feet in diameter. Resonate the loop with a variable capacitor. The interesting property of a loop such as this is not that it improves signals in a desired direction, but rather it provides deep nulls which can be oriented to reduce interference from other stations located in a different direction from the desired station.

Barry WA4VZQ

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Date: Tue, 24 Aug 1993 22:02:49 GMT  
From: mcsun!sun4nl!relay.philips.nl!philica!geertj@uunet.uu.net  
Subject: How to make one (was: SWR Meters)  
To: ham-ant@ucsd.edu

alanb@sr.hp.com (Alan Bloom) writes:

>"Eleen N. Kamas" (ee2g+@andrew.cmu.edu) wrote:

>:

>: I have a SWR meter that was designed to be used for HF frequencies.

>: Is it possible to modify it to work on 2 meters?

>Try it! I have found that many of the cheap SWR meters work passable

>well on 2 meters as-is. If it reads close to 1:1 into a good 50-ohm load,

>and reads infinity into an open circuit, then it is probably usable.

If the SWR 'engine' isn't usable (in my experience, it usually isn't),  
you could try to make a new engine. I did something like:

1. Take a small piece of RG213 (or other, requirements are  
cable as thick as possible; solid dielectricum, woven braid)
2. Gently remove the outer isolation (gently! has to be put back later on)  
Cutting on the length side of the cable gives best results.
3. Push the outer braid in (like a harmonica), so the inner diameter  
raises and the solid inner coax cable can be easily removed;
4. Put two thin, isolated wired wires (e.g. teflon 'wire wrap' wire)  
in parallel to the inner conductor of the coax (the part you took out in  
step 3); the ends of the wire should be accessible later
5. Re-apply the braid you took out in step 3. Make shure that the 4 ends  
of the wire you added remain accessible; peel them trough the braid.  
Make shure that you re-apply the braid as neatly as possible; the  
impedance of the coax is determined by this and thus the accuracy  
of your instrument!
6. Re-apply the outer isolation as neatly as possible. This helps to  
improve your work from step 5. Make provisions for the wires you added.
7. Put the coax between the two connectors of the original SWR casing.  
\*NEATLY\*. No pigtails please; make it in a VHF fashion.  
The accuray of your device is determined by the impedance of it;  
the 'modified' coax and the connection to the connectors will disturb  
the impedance of the unit and that should be as less as possible!
8. Hook up the two sense wires as in the original scheme: on the left,  
a trimming pot on wire 1 and a diode detector on wire 2; on the  
right, another diode detector on wire 1 and a trimming pot on  
wire 2 (thus, cross).

The original unit probably has long wires to a PCB containing these  
components in the original setup; this is no longer possible

(remember, we're talking VHF). Apply them in such a way that the VHF 'hot' sense wires are as short as possible (a few mm's at most). The DC wires (the output of the detectors) is, of course, much less of a problem.

9. You probably should swap the diodes originally used in the detectors for something better. Use low-voltage drop diodes; schottky or such. I have used OA91 diodes but they are probably not known in the USA. They are low-capacity, high-speed, low-drop detector diodes for AM video signals (at worst, you have to take them out of 2 TV sets; as an added bonus, the other components are now also available for other projects :-)

Then, wire the rest of the SWR meter as you normally do, and adjust the two puts on the sense wires.

On short, what you have done is added two sense wires to a piece of coax. That piece of coax has to remain 'coax' as much as possible, hence my emphasis on \_short\_ wires. The better the coax is restored to its original form, the better the meter. (that is why I advised \*thick\* coax; the changes have less impact on the characteristics of this than on thin coax).

This, of course, doesn't make up for a bird meter. It also doesn't cost nearly as much. I used one in my student years; I only replaced it a year ago when I needed something for higher frequencies, was too lazy to build it, and got away with it because I now could afford to buy one instead :-).

This makes up for a nice weekend project. You probably ruin the first piece of coax; since only small lengths are involved, that's no problem.

Hope this helps, 73,

Geert Jan, PE1HZG

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Date: 24 Aug 93 21:42:36 GMT  
From: psinntp!newsserver.pixel.kodak.com!kodak!ornitz@uunet.uu.net  
Subject: Wanted - a long distance AM antenna  
To: ham-ant@ucsd.edu

In article <1993Aug24.174637.10864@hpcvca.cv.hp.com>  
hintzman@hpcvcbn.cv.hp.com writes:

>I'm interested in assembling a good antenna for receiving commercial AM  
>broadcasts. By that I mean being able to bring in stations 200 miles or  
>more away. Depending on atmospheric conditions, I can pull in these  
>stations at night, but during the day the range is quite limited.

It is very doubtful you will be able to receive daytime MW signals from several hundred miles away. You will run into what is known as D-layer absorption in the atmosphere. Radio propagation is far too complex to discuss here, but you should be able to find any number of good books on the subject. Essentially the D-layer in the ionosphere is highly ionized in the daytime leading to strong signal absorption. At night the D-layer disappears allowing long-distance propagation of MW signals.

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